AUTHOR INDEX

Abrams, M., Current and future developments in radiation therapy treatment planning, 359
Allen, Robert, Orientation of a clinical imaging system (Abstract only), 152
Anderson, D. J., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract only), 214
Anderson, William H., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Arenson, Ronald L., Comprehensive radiology management system without picture archival and communication system, 334
———, Fiber optic communication system for medical images, 74
Arink, G. J., Image management for photoelectric imaging (Abstract only), 151
Azzawi, Yu-Ming, Network image processing for computer tomography scanners: report on clinical trial sites, 102
Baily, Norman A., Digitizing and interfacing of nondigital images, 261
Bartuska, A. J., Promising rapid access high-capacity mass storage technique for diagnostic information utilizing opitcal disc, 36
Batnitzky, Solomon, Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Baxter, Brent S., American Association of Physicists in Medicine standard magnetic tape format for digital image exchange, an, 284
———, Characteristics of a protocol for exchanging digital image information, 273
Bell, H. S., Analysis of hierarchical storage of radiologic images based on the Morse model, 327
Benton, Ronald L., Storage technology for the 1980s, 60
Billingsley, Fred C., Landsat computer-compatible tape family, 278
Blaine, G. J., Study of a distributed picture archiving and communication system for radiology, 133
Blom, G. M., Optical disc data storage, 43
Blumstein, James, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract only), 382
Böhm, Michael, Image management in the System CA/1, 161
Böhring, D., Hierarchical approach to distributed picture information systems, 112
———, Modular multiprocessor picture computer architecture for distributed picture information systems, 125
Brewster, Robert B., Network image processing for computer tomography scanners: report on clinical trial sites, 102
Brody, W. R., Analysis of hierarchical storage of radiologic images based on the Morse model, 327
Calvani, Terry, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract only), 382
Capp, M. P., Photoelectronic-digital radiology at the University of Arizona, (Abstract only), 205
Carmen, Ralph, Rapid review of multiple images with reconstructions in arbitrary orthogonal planes, 319
Cerva, J., Teleradiology field demonstration, the, 168
Chan, Francis H., Contrast perception with video displays, 223
Chaney, E. L., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract only), 214
Clouthier, Ronald, Digital storage and fast communication links for medical image analysis, 246
Colby, R. L., Promising rapid access high-capacity mass storage technique for diagnostic information utilizing optical disc, 36
Cook, Larry T., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Cox, J. R., Study of a distributed picture archiving and communication system for radiology, 133
Cuigniez, Francis J. G., Laser-disc storage for all digital x-ray images in a large hospital, 316
Darlak, Joseph J., Nonfilm radiographic image transmission and storage with remote and random access, 186
Delany, D. J., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract only), 214
DiBianca, F. A., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina, (Abstract only), 214
Duerinckx, André J., Filmless picture archiving and communication in diagnostic radiology, 9
Dunn, James F., Cathode ray tube film recording of video based medical images, 216
———, Future trends in cathode ray tube film recorders for medical imaging, 235
Dwyer, Samuel J. III, Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Edens, William R., Computed tomography and picture archiving and communications systems, 349
Edwin, Allan I., Theory and uses of a broad band coaxial cable information system in the hospital environment, 89
Enzmann, D. R., Analysis of hierarchical storage of radiologic images based on the Morse model, 327
Faszold, Susan, Cost of managing digital diagnostic images for a 614 bed hospital, 3
Ferrari, Leonard A., Existing and future capabilities in instrumentation magnetic recording, 56
Fisher, H. D. III, Photoelectronic-digital radiology at the University of Arizona, (Abstract only), 205
Fralick, Stan, High speed multi-access data bus, 95
Gardineer, Bayard, Video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic imaging of the breast, 311
Gerber, F. H., Teleradiology via the Naval Remote Medical Diagnosis System, 174
Glenn, William V., Jr., Network image processing for computer tomography scanners: report on clinical trial sites, 102
———, True three-dimensional display of computer data: medical applications, 248
Goitein, M., Current and future developments in radiation therapy treatment planning, 359
Gordon, Richard, Computed tomography for remote areas via teleradiology, 182
Grewer, R., Hierarchical approach to distributed picture information systems, 112
———, Laboratory prototype system for the archiving of CT pictures on optical discs, 308
Guilford, W. B., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract only), 214
Hall, Donald, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract only), 382
Haney, M. J., On standards for the storage of images and data, 294

Harder, Edward L., Theory and uses of a broad band coaxial cable information system in the hospital environment, 89
Hedberg, David J., Real-time digital video disk recorder for medical imaging, 47
Hensley, K. S., Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Herger, H., Laboratory prototype system for the archiving of CT pictures on optical discs, 308
Hermes, Thomas, Fiber optic broad band communications systems—design and realizations, 84
Herzog, D. G., Promising rapid access high-capacity mass storage technique for diagnostic information utilizing optical disc, 36
Hill, R. L., Study of a distributed picture archiving and communication system for radiology, 133
Hitchner, Lewis E., American Association of Physicists in Medicine standard magnetic tape format for digital image exchange, an, 284
———, Characteristics of a protocol for exchanging digital image information, 273
Höhne, Karl Heinz, Image management in the System CA/1, 161
Horii, S. C., Image processing requirements in hospitals and an integrated systems approach, 206
Horn, Richard A., Imaging systems in radiation oncology, 365
Hottinger, C. F., Ultrasound picture archiving and communication systems, 369
Howlett, Charles, Video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic imaging of the breast, 311
James, A. Everette, Jr., Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract only), 382
———, Nuclear magnetic resonance imaging: potential impact on medical diagnosis and digital data communications, 355
Jaques, P. F., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract only), 214
Johnston, R. E., Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract only), 214
Johnston, R. Eugene, Contrast perception with video displays, 223
———, Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
Johnston, R. L., On standards for the storage of images and data, 294
Jones, Joie Pierce, Integration of medical imaging modalities (Abstract only), 23
Jost, R. G., Study of a distributed picture archiving and communication system for radiology, 133
Kerlin, B., The teleradiology field demonstration, 168
Koestner, Ken, Ultrasound picture archiving and communication systems, 369
Kouwenberg, Jef M. L., Laser-disc storage for all digital x-ray images in a large hospital, 316
Kreutzer, Heinrich W., Fiber optic broad band e for medical image processing, 240
Lazzaro, Gerard, Video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic imaging of the breast, 311
Lee, Kyo Rak, Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
LeFree, M. T., Centralized digital picture processing system for cardiac imaging, 375
Levine, Errol, Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging managment system for a radiology department, 194
Lippman, Andrew B., Emerging computer media: on image interaction, 383
London, Jack W., Comprehensive radiology management system without picture archival and communication system, 334
———, Fiber optic communication system for medical images, 74
Lyons, David, Video-photographic system for rapid inexpensive unit-record and flexible replay of real-time ultrasonic imaging of breast, 311
Maguire, Gerald Q., Jr., American Association of physicists in Medicine standard magnetic tape format for digital image exchange, an, 284
———, Characteristics of a protocol for exchanging digital image information, 273
———, Image processing requirements in hospitals and an integrated systems approach, 206
Marceau, Carla, What is a picture archiving and communication system?, 24
Martin, Michael, Rapid review of multiple images with reconstructions in arbitrary orthogonal planes, 319
Martin, Norman L., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
McCartney, W. H., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina, (Abstract only), 214
Meyer-Ebrecht, D., Hierarchical approach to distributed picture information systems, 112
———, Laboratory prototype system for the archiving of CT pictures on optical discs, 308
———, Modular multiprocessor picture computer architecture for distributed picture information systems, 125
———, Proposed standard for variable format picture processing and a codec approach to match diverse imaging devices, 298
Mezrich, Reuben, Video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic imaging of the breast, 311
Millstone, T., Teleradiology field demonstration, the, 168
Mönnich, K.-J., Hierarchical approach to distributed picture information systems, 112
———, Laboratory prototype system for the archiving of CT pictures on optical discs, 308
Morton, Dan E., Comprehensive radiology management system without picture archival and communication system, 334
———, Fiber optic communication system for medical images, 74
Nadan, J. S., Recent advances in digital optical recording, 32
Nalcioglu, Orhan, Requirements and capabilities of video systems to provide quantitative information (Abstract only), 268
Nitteberg, Alan, Design criteria for networked image analysis system, 143
———, High speed multi-access data bus, 95
Northway, W. H., Jr., Analysis of hierarchical storage of radiologic images based on the Morse model, 327
Noz, M. E., Image processing requirements in hospitals and an integrated systems approach, 206
Nudelman, S., Photoelectronic-digital radiology at the University of Arizona (Abstract only), 205
Obermöller, Ulrich, Image management in the System CA/1, 161
O'Brien, W. D., Jr., On standards for the storage of images and data, 294
Ouimette, D., Photoelectronic-digital radiology at the University of Arizona (Abstract only), 205
Ovitt, T. W., Photoelectronic-digital radiology at the University of Arizona (Abstract only), 205
Partain, C. Leon, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract only), 382
———, Nuclear magnetic resonance imaging: potential impact on medical diagnosis and digital data communications, 355
Patton, James A., Nuclear magnetic resonance imaging: potential impact on medical diagnosis and digital data communications, 355

Pendergrass, Henry, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract only), 382
Pfeiffer, Guido, Image management in the System CA/1, 161
Pisa, E. J., Filmless picture archiving and communication in diagnostic radiology, 9
Pizer, Stephen M., Contrast perception with video displays, 223
———, Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract only), 214
Pollari, H., Current and future developments in radiation therapy treatment planning, 359
Preston, David F., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Prewitt, Judith M. S., IEEE logical format for external exchange of image data bases, 272
Price, Hilton I., Cost of managing digital diagnostic images for a 614 bed hospital, 3
Price, Ronald R., Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract only), 382
———, Nuclear magnetic resonance imaging: potential impact on medical diagnosis and digital data communications, 355
Quimby, Charles, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract only), 382
Quintin, June A., University of California San Francisco automated radiology department system—without picture archival and communication system, 338
Rangaraj, M. R., Computed tomography for remote areas via teleradiology, 182
Rasmussen, Will, Teleradiology via the Naval Remote Medical Diagnosis System, 174
Reader, Cliff, Design criteria for networked image analysis system, 143
Rhodes, Michael L., Network image processing for computer tomography scanners: report on clinical trial sites, 102
———, True three-dimensional display of computer data: medical applications, 248
Robinson, Ralph G., Use of medical images in today's hospitals (Abstract only), 2
Roehrig, H., Photoelectronic-digital radiology at the University of Arizona, 205
Rollo, F. David, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract only), 382
Rosenthal, Stanton J., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Rothman, Stephen L. G., Network image processing for computer tomography scanners: report on clinical trial sites, 102
Rowell, D., Current and future developments in radiation therapy treatment planning, 359
Sachs, Martin W., Applications of fiber optics to computer systems, 80
Scatliff, J. H., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract only), 214
———, Scheibe, Paul O., Architecture of a family of medical imaging systems, 117
Schimpf, J. H., Image processing requirements in hospitals and an integrated systems approach, 206
Schmidt, J., Hierarchical approach to distributed picture information systems, 112
———, Modular multiprocessor picture computer architecture for distributed picture information systems, 125
Schneider, Roger H., Role of standards in the development of systems for communicating and archiving medical images, the, 270
Schwenker, Ronald P., Film selection considerations for video photography, 231
Sherrard, Thomas, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract only), 382
Simborg, Donald W., University of California San Francisco automated radiology department system—without picture archival and communication system, 338
Skinner, F. L., Teleradiology field demonstration, the, 168
Staab, E. V., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract only), 214
Stephens, W. Hoyt, Legal implications associated with new medical imaging technology (Abstract only), 382
Stevens, Ilya, Teleradiology via the Naval Remote Medical Diagnosis System, 174
Stover, Henry S., True three-dimensional display of computer data: medical applications, 248
Suthasinekul, Surachai, Recent development in optical data storage, 55
Svensson, H., Modular multiprocessor picture computer architecture for distributed picture information systems, 125
Tarlton, Mark A., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Templeton, Arch W., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Thomas, A. J., Pictorial information system architectures for diagnostic imaging, 153
Thompson, B. G., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract only), 214
Vanden Brink, John A., Present practice and perceived needs—managing diagnostic images, 387
Vilkomerson, David, Rapid review of multiple images with reconstructions in arbitrary orthogonal planes, 319
Vizy, Kalman N., Digital radiography and picture archiving and communication systems (Abstract only), 348
Vogel, R. A., Centralized digital picture processing system for cardiac imaging, 375
Wake, Robert H., Nuclear medicine and the distributed system, 341
Washburn, D. B., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract only), 214
Wendler, Th., Hierarchical approach to distributed picture information systems, 112
———, Modular multiprocessor picture computer architecture for distributed picture information systems, 125
———, Proposed standard for variable format picture processing and a codec approach to match diverse imaging devices, 298
Wiles, J., Current and future developments in radiation therapy treatment planning, 359
Wiseman, Donald, Video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic imaging of the breast, 311
Zeleznik, M. P., Image processing requirements in hospitals and an integrated systems approach, 206
Zimmerman, John B., Contrast perception with video displays, 223
Zoeller, Michael A., Existing and future capabilites in instrumentation magnetic recording, 56

SUBJECT INDEX

American Association of Physicists in Medicine standard magnetic tape format for digital image exchange, an, 284
Analysis of hierarchical storage of radiological images based on the Morse model, 327
Applications of fiber optics to computer systems, 80
Architecture for distributed picture information systems, modular multiprocessor picture computer, 125
Architecture of a family of medical imaging systems, 117
Architecture for medical image processing, new systems, 240
Architectures for diagnostic imaging, pictorial information system, 153

Breast, video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic imaging of the, 311

Cable information system in the hospital environment, theory and uses of a broad band coaxial, 89
Cardiac imaging, centralized digital picture processing system for, 375
Cathode ray tube film recorders for medical imaging, future trends in, 235
Cathode ray tube film recording of video based medical images, 216
Centralized digital picture processing system for cardiac imaging, 375
Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract only), 382
Characteristics of a protocol for exchanging digital image information, 273
Clinical imaging system, orientation of a (Abstract only), 152
Clinical trial sites, network image processing for computer tomography scanners: report on, 102
Codec approach to match diverse imaging devices, proposed standard for variable format picture processing and a, 298
Combined acquisition/processing for data reduction, 256
Communicating and archiving medical images, the role of standards in the development of systems for, 270
Communication system for medical images, fiber optic, 74
Communication system for radiology, study of a distributed picture archiving and, 133
Communication system: plan, management and initial experience in prototype at the University of North Carolina, medical image, 19
Communications, nuclear magnetic resonance imaging: potential impact on medical diagnosis and digital data, 355
Communications systems: expansion from a prototype at the University of North Carolina, medical image (Abstract only), 214
Communications systems—design and realizations, fiber optic broad band, 84
Comprehensive radiology management system without picture archival and communication system, 334
Computed tomography and picture archiving and communications systems, 349
Computer architecture for distributed picture information systems, modular multiprocessor picture, 125
Computed tomography for remote areas via teleradiology, 182
Computer-compatible tape family, Landsat, 278
Computer data: medical applications, true three-dimensional, 248
Computer media: on image interaction, emerging, 383
Computer systems, applications of fiber optics to, 80
Computer tomography scanners: report on clinical trial sites, network image processing for, 102
Contrast perception with video displays, 223
Cost of managing digital diagnostic images for a 614 bed hospital, 3
Criteria for networked image analysis system, design, 143
Current and future developments in radiation therapy treatment planning 359

Data bases, IEEE logical format for external exchange of image (Abstract only), 272
Data bus, high speed multi-access, 95
Data reduction, combined acquisition/processing for, 256
Data storage, optical disc, 43
Design criteria for networked image analysis system, 143
Diagnosis and digital data communications, nuclear magnetic resonance imaging: potential impact on medical, 355
Diagnostic images, present practice and perceived needs—managing, 387
Diagnostic images for a 614 bed hospital, cost of managing digital, 3
Diagnostic imaging management system for a radiology department, salient characteristics of a distributed, 194
Diagnostic imaging, pictorial information system architectures for, 153
Diagnostic information utilizing optical disc, promising rapid access high-capacity mass storage technique for, 36
Diagnostic medical imaging: emphasis upon new technology, certain legal considerations as applied to (Abstract only), 382
Diagnostic radiology, filmless picture archiving and communication in, 9
Digital radiography and picture archiving and communication systems (Abstract only), 348
Digital radiology at the University of Arizona, photoelectronic- (Abstract only), 205
Digital storage and fast communication links for medical image analysis, 246
Digitizing and interfacing of nondigital images, 261
Display of computer data: medical applications, true three-dimensional, 248
Displays, contrast perception with video, 223
Distributed picture information systems, hierarchical approach to, 112
Distributed picture information systems, modular multiprocessor picture computer architecture for, 125
Distributed system, nuclear medicine and the, 341

Emerging computer media: on image interaction, 383
Existing and future capabilities in instrumentation magnetic recording, 56

Fast communication links for medical image analysis, digital storage and, 246
Fiber optic broad band communications systems—design and realizations, 84
Fiber optic communication system for medical images, 74
Fiber optics to computer systems, applications of, 80
Field demonstration, the teleradiology, 168
Film recorders for medical imaging, future trends in cathode ray tube, 235
Film recording of video based medical images, cathode ray tube, 216
Film selection considerations for video photography, 231
Filmless picture archiving and communication in diagnostic radiology, 9
Future trends in cathode ray tube film recorders for medical imaging, 235

Hierarchical approach to distributed picture information systems, 112
Hierarchical storage of radiologic images based on the Morse model, analysis of, 327
High speed multi-access data bus, 95
Hospital, cost of managing digital diagnostic images for a 614 bed, 3
Hospital environment, theory and uses of a broad band coaxial cable information system in the, 89
Hospital, laser-disc storage for all digital x-ray images in a large, 316
Hospitals and an integrated systems approach, image processing requirements in, 206
Hospitals, use of medical images in today's (Abstract only), 2

IEEE logical format for external exchange of image data bases (Abstract only), 272

Image analysis, digital storage and fast communication links for medical, 246
Image analysis system, design criteria for networked, 143
Image communication system: plan, management and initial experience in prototype at the University of North Carolina, medical, 19
Image communications system: expansion from a prototype at the University of North Carolina, medical (Abstract only), 214
Image data bases, IEEE logical format for external exchange of (Abstract only), 272
Image exchange, an American Association of Physicists in Medicine standard magnetic tape format for digital, 284
Image information, characteristics of a protocol for exchanging digital, 273
Image interaction, emerging computer media: on, 383
Image management for photoelectric imaging (Astract only), 151
Image management in the System CA/1, 161
Image processing for computer tomography scanners: report on clinical trial sites, network, 102
Image processing, new systems architecture for medical, 240
Image processing requirements in hospitals and an integrated systems approach, 206
Image transmission and storage with remote and random access, nonfilm radiographic, 186
Images based on the Morse model, analysis of hierarchical storage of radiologic, 327
Images, cathode ray tube film recording of video based medical, 216
Images and data, on standards for the storage of, 294
Images, digitizing and interfacing of nondigital, 261
Images, fiber optic communication system for medical, 74
Images in a large hospital, laser-disc storage for all digital x-ray, 316
Images, present practice and perceived needs—managing diagnostic, 387
Images with reconstructions in arbitrary orthogonal planes, rapid review of multiple, 319
Images, the role of standards in the development of systems for communicating and archiving medical, 270
Images for a 614 bed hospital, cost of managing digital diagnostic, 3
Images in today's hospitals, use of medical (Abstract only), 2
Imaging of the breast, video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic, 311
Imaging, centralized digital picture processing system for cardiac, 375
Imaging devices, proposed standard for variable format picture processing and a codec approach to match diverse, 298
Imaging, future trends in cathode ray tube film recorders for medical, 235
Imaging, image management for photoelectric (Abstract only), 151
Imaging management system for a radiology department, salient characteristics of a distributed diagnostic, 194
Imaging modalities, integration of medical (Abstract only), 23
Imaging, pictorial information system architectures for diagnostic, 153
Imaging: potential impact on medical diagnosis and digital data communications, nuclear magnetic resonance, 355
Imaging, real-time digital video disk recorder for medical, 47
Imaging system, orientation of a clinical (Abstract only), 152
Imaging systems in radiation oncology, 365
Information system architectures for diagnostic imaging, pictorial, 153
Information system in the hospital environment, theory and uses of a broad band coaxial cable, 89
Integration of medical imaging modalities (Abstract only), 23

Laboratory prototype system for the archiving of CT pictures on optical discs, 308
Landsat computer-compatible tape family, 278
Laser-disc storage for all digital x-ray images in a large hospital, 316
Legal considerations as applied to diagnostic medical imaging: emphasis upon new technology, certain (Abstract only), 382

Magnetic recording, existing and future capabilities in instrumentation, 56
Magnetic tape format for digital image exchange, an American Association of Physicists in Medicine standard, 284
Management in the System CA/1, image, 161
Management system without picture archival and communication system, comprehensive radiology, 334
Management system for a radiology department, salient characteristics of a distributed diagnostic imaging, 194
Managing diagnostic images, present practice and perceived needs—, 387
Medical applications, true three-dimensional display of computer data, 248
Medical diagnosis and digital data communications, nuclear magnetic resonance imaging: potential impact on, 355
Medical image analysis, digital storage and fast communication links for, 246
Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract only) , 214
Medical image processing, new systems architecture for, 240
Medical images, cathode ray tube film recording of video based, 216
Medical images, fiber optic communication system for, 74
Medical images, the role of standards in the development of systems for communicating and archiving, 270
Medical images in today's hospitals, use of (Abstract only), 2
Medical imaging: emphasis upon new technology, certain legal considerations as applied to diagnostic (Abstract only), 382
Medical imaging, future trends in cathode ray tube film recorders for, 235
Medical imaging modalities, integration of (Abstract only), 23
Medical imaging, real-time digital video disk recorder for, 47
Medical imaging systems, architecture of a family of, 117
Medicine and the distributed system, nuclear, 341
Modular multiprocessor picture computer architecture for distributed picture information systems, 125
Morse model, analysis of hierarchical storage of radiologic images based on the, 327
Multiprocessor picture computer architecture for distributed picture information systems, modular, 125

Naval Remote Medical Diagnosis System, teleradiology via the, 174
Network image processing for computer tomography scanners: report on clinical trial sites, 102
New systems architecture for medical image processing, 240
1980s, storage technology for the, 60
Nonfilm radiographic image transmission and storage with remote and random access, 186
Nuclear magnetic resonance imaging: potential impact on medical diagnosis and digital data communications, 355
Nuclear medicine and the distributed system, 341

On standards for the storage of images and data, 294
Oncology, imaging systems in radiation, 365
Optical data storage, recent development in, 65
Optical disc data storage, 43
Optical disc, promising rapid access high-capacity mass storage technique for diagnostic information utilizing, 36
Optical discs, laboratory prototype system for the archiving of CT pictures on, 308
Optical recording, recent advances in digital, 32
Orientation of a clinical imaging system (Abstract only), 152
Orthogonal planes, rapid review of multiple images with reconstructions in arbitrary, 319

Perception with video displays, contrast, 223
Photoelectric imaging, image management for (Abstract only), 151
Photoelectronic-digital radiology at the University of Arizona (Abstract only), 205
Pictorial information system architectures for diagnostic imaging, 153

Picture archival and communication system, comprehensive radiology management system without, 334
Picture archiving and communication in diagnostic radiology, filmless, 9
Picture archiving and communication system, University of California San Francisco automated radiology department system—without, 338
Picture archiving and communication system?, what is a, 24
Picture archiving and communication system for radiology, study of a distributed, 133
Picture archiving and communication systems, computed tomography and, 349
Picture archiving and communication systems, digital radiography (Abstract only), 348
Picture archiving and communication systems, ultrasound, 369
Picture computer architecture for distributed picture information systems, modular multiprocessor, 125
Picture information systems, hierarchical approach to distributed, 112
Picture processing and a codec approach to match diverse imaging devices, proposed standard for variable format, 298
Picture processing system for cardiac imaging, centralized digital, 375
Present practice and perceived needs—managing diagnostic images, 387
Promising rapid access high-capacity mass storage technique for diagnostic information utilizing optical disc, 36
Proposed standard for variable format picture processing and a codec approach to match diverse imaging devices, 298
Protocol for exchanging digital image information, characteristics of a, 273
Prototype system for the archiving of computerized tomographic pictures on optical discs, laboratory, 308
Prototype at the University of North Carolina, medical image communications system: expansion from a (Abstract only), 214
Prototype at the University of North Carolina, medical image communication system: plan, management and initial experience in, 19

Quantitative information, requirements and capabilities of video systems to provide (Abstract only), 268

Radiation oncology, imaging systems in, 365
Radiation therapy treatment planning, current and future developments in, 359
Radiographic image transmission and storage with remote and random access, nonfilm, 186
Radiography and picture archiving and communication systems, digital (abstract only), 348
Radiologic images based on the Morse model, analysis of hierarchical storage of, 327
Radiology department, salient characteristics of a distributed diagnostic imaging management system for a, 194
Radiology, filmless picture archiving and communication in diagnostic, 9
Radiology management system without picture archival and communication system, comprehensive, 334
Radiology at the University of Arizona, photoelectronic-digital (Abstract only), 205
Radiology, study of a distributed picture archiving and communication system for, 133
Random access, nonfilm radiographic image transmission and storage with remote and, 186
Rapid review of multiple images with reconstructions in arbitrary orthogonal planes, 319
Real-time digital video disk recorder for medical imaging, 47
Real-time ultrasonic imaging of the breast, video-photographic system for rapid inexpensive unit-record recording and flexible replay of, 311
Recent advances in digital optical recording, 32
Recent development in optical data storage, 65
Reconstruction in arbitrary orthogonal planes, rapid review of multiple images with, 319
Recording, existing and future capabilities in instrumentation magnetic, 56
Recording and flexible replay of real-time ultrasonic imaging of the breast, video-photographic system for rapid inexpensive unit-record, 311
Recording, recent advances in digital optical, 32
Recording of video based medical images, cathode ray tube film, 216
Remote areas via teleradiology, computed tomography for, 182
Remote Medical Diagnosis System Teleradiology via the Naval, 174
Remote and random access, nonfilm radiographic image transmission and storage with, 186
Requirements and capabilities of video systems to provide quantitative information (Abstract only), 268
Role of standards in the development of systems for communicating and archiving medical images, the, 270

Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Standard magnetic tape format for digital image exchange, an American Association of Physicists in Medicine, 284
Standard for variable format picture processing and a codec approach to match diverse imaging devices, proposed, 298
Standards in the development of systems for communicating and archiving medical images, the role of, 270
Standards for the storage of images and data, on, 294
Storage for all digital x-ray images in a large hospital, laser-disc, 316
Storage and fast communication links for medical image analysis, digital, 246
Storage of images and data, on standards for the, 294
Storage, optical disc data, 43
Storage of radiologic images based on the Morse model, analysis of hierarchical, 327
Storage, recent development in optical data, 65
Storage technique for diagnostic information utilizing optical disc, promising rapid access high-capacity mass, 36
Storage technology for the 1980s, 60
Study of a distributed picture archiving and communication system for radiology, 133

Teleradiology, computed tomography for remote areas via, 182
Teleradiology field demonstration, the, 168
Teleradiology via the Naval Remote Medical Diagnosis System, 174
Theory and uses of a broad band coaxial cable information system in the hospital environment, 89
Three-dimensional display of computer data: medical applications, true, 248
True three-dimensional display of computer data: medical applications, 248

Ultrasonic imaging of the breast, video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time, 311
Ultrasound picture archiving and communication systems, 369
University of Arizona, photoelectronic-digital radiology at the (Abstract only), 205
University of California San Francisco automated radiology department system—without picture archiving and communication system, 338
University of North Carolina, medical image communication system: plan, management and initial experience in prototype at the, 19
Use of medical images in today's hospitals (Abstract only), 2
Video based medical images, cathode ray tube film recording of, 216
Video disk recorder for medical imaging, real-time digital, 47
Video displays, contrast perception with, 223
Video-photographic system for rapid inexpensive unit-recording and flexible replay of real-time ultrasonic imaging of the breast, 311
Video photography, film selection considerations for, 231
Video systems to provide quantitative information, requirements and capabilities (Abstract only), 268

What is a picture archiving and communication system, 24

X-ray images in a large hospital, laser-disc storage for all digital, 316

Author Index

Abrams, M., Current and future developments in radiation therapy treatment planning, 359
Allen, Robert, Orientation of a clinical imaging system (Title only), 152, 418
Amazeen, Paul G., Equipment Manufacturers' View on PACS (Panel), 432
Anderson, D. J., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract), 214; (Paper), 423
Anderson, William H., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 914
Arenson, Ronald L., Comprehensive radiology management system without picture archival and communication system (PACS), 334
———, Fiber optic communication system for medical images, 74
Arink, G. J., Electronic image management for medicine, 410 (see also Image management for photoelectric imaging (Abstract), 151)
———, Equipment Manufacturers' View on PACS (Panel), 432
Azzawi, Yu-Ming, Network image processing for computer tomography (CT) scanners: report on clinical trial sites, 102
Baily, Norman A., Digitizing and interfacing of nondigital images, 261
Bartuska, A. J., Promising rapid access high-capacity mass storage technique for diagnostic information utilizing optical disc, 36
Batnitzky, Solomon, Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Baxter, Brent S., American Association of Physicists in Medicine (AAPM) standard magnetic tape format for digital image exchange, an, 284
———, Characteristics of a protocol for exchanging digital image information, 273
Bell, H. S., Analysis of hierarchical storage of radiologic images based on the Morse model, 327
Benton, Ronald L., Storage technology for the 1980s, 60
Billingsley, Fred C., Landsat computer-compatible tape family, 278
Blaine, G. J., Study of a distributed picture archiving and communication system for radiology, 133
Blom, G. M., Optical disc data storage, 43
Blumstein, James, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract), 382 (See also Legal implications associated with new medical imaging technology, 464)
Böhm, Michael, Image management in the System CA/1, 161
Böhring, D., Hierarchical approach to distributed picture information systems, 112
———, Modular multiprocessor picture computer architecture for distributed picture information systems, 125
Brewster, Robert B., Network image processing for computer tomography (CT) scanners: report on clinical trial sites, 102
Brody, W. R., Analysis of hierarchical storage of radiologic images based on the Morse model, 327
Calvani, Terry, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract), 382 (See also Legal implications associated with new medical imaging technology, 464)
Capp, M. P., Photoelectronic-digital radiology (PE-DI-R) at the University of Arizona (Abstract), 205, 422
Carmen, Ralph, Rapid review of multiple images with reconstructions in arbitrary orthogonal planes, 319
Cerva, J., Teleradiology field demonstration, the, 168
Chan, Francis H., Contrast perception with video displays, 223
Chaney, E. L., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract), 214; (Paper), 423
Clouthier, Ronald, Digital storage and fast communication links for medical image analysis, 246
Colby, R. L., Promising rapid access high-capacity mass storage technique for diagnostic information utilizing optical disc, 36
Cook, Larry T., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Cox, J. R., Study of a distributed picture archiving and communication system for radiology, 133
Cuigniez, Francis J. G., Laser-disc storage for all digital x-ray images in a large hospital, 316
Darlak, Joseph J., Medical Community's View on PACS, The (Panel), 476
———, Nonfilm radiographic image transmission and storage with remote and random access, 186
Delany, D. J., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract), 214; (Paper), 423
DiBianca, F. A., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract), 214; (Paper), 423
Duerinckx, André J., Filmless picture archiving and communication in diagnostic radiology, 9
Dunn, James F., Cathode ray tube (CRT) film recording of video based medical images, 216
———, Equipment Manufacturers' View on PACS (Panel), 432
———, Future trends in cathode ray tube (CRT) film recorders for medical imaging, 235
Dwyer, Samuel J. III, Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Edens, William R., Computed tomography (CT) and picture archiving and communications systems (PACS), 349
Edwin, Allan I., Theory and uses of a broad band coaxial cable information system in the hospital environment, 89
Enzmann, Dieter R., Analysis of hierarchical storage of radiologic images based on the Morse model, 327
———, Medical Community's View on PACS, The (Panel), 476
Faszold, Susan, Cost of managing digital diagnostic images for a 614 bed hospital, 3
Ferrari, Leonard A., Existing and future capabilities in instrumentation magnetic recording, 56
Fisher, H. D. III, Photoelectronic-digital radiology (PE-DI-R) at the University of Arizona (Abstract), 205, 422
Fralick, Stan, High speed multi-access data bus, 95
Gayler, Robert, Medical Community's View on PACS, The (Panel), 476
Gardineer, Bayard, Video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic imaging of the breast, 311
Gerber, F. H., Teleradiology via the Naval Remote Medical Diagnosis System (RMDS), 174

Glenn, William V., Jr., Medical Community's View on PACS, The (Panel), 476
———, Network image processing for computer tomography (CT) scanners: report on clinical trial sites, 102
———, True three-dimensional (3-D) display of computer data: medical applications, 248
Goitein, M., Current and future developments in radiation therapy treatment planning, 359
Gordon, Richard, Computed tomography for remote areas via teleradiology, 182
Grewer, R., Hierarchical approach to distributed picture information systems, 112
———, Laboratory prototype system for the archiving of computerized tomography (CT) pictures on optical discs, 308
Guilford, W. B., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract), 214; (Paper), 423
Hall, Donald, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract), 382 (See also Legal implications associated with new medical imaging technology, 464)
Haney, M. J., On standards for the storage of images and data, 294
Harder, Edward L., Theory and uses of a broad band coaxial cable information system in the hospital environment, 89
Hedberg, David J., Real-time digital video disk recorder for medical imaging, 47
Hensley, K. S., Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Herger, H., Laboratory prototype system for the archiving of computerized tomography (CT) pictures on optical discs, 308
Hermes, Thomas, Fiber optic broad band communications systems—design and realizations, 84
Herzog, D. G., Promising rapid access high-capacity mass storage technique for diagnostic information utilizing optical disc, 36
Hill, R. L., Study of a distributed picture archiving and communication system for radiology, 133
Hitchner, Lewis E., American Association of Physicists in Medicine (AAPM) standard magnetic tape format for digital image exchange, an, 284
———, Characteristics of a protocol for exchanging digital image information, 273
Höhne, Karl Heinz, Image management in the System CA/1, 161
Horii, S. C., Image processing requirements in hospitals and an integrated systems approach, 206
Horn, Richard A., Imaging systems in radiation oncology, 365
Hottinger, C. F., Ultrasound picture archiving and communication systems, 369
Howlett, Charles, Video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic imaging of the breast, 311
James, A. Everette, Jr., Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract), 382 (See also Legal implications associated with new medical imaging technology, 464)
———, Medical Community's View on PACS, The (Panel), 476
———, Nuclear magnetic resonance (NMR) imaging: potential impact on medical diagnosis and digital data communications, 355
Jaques, P. F., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract), 214; (Paper), 423
Johnston, R. E., Contrast perception with video displays, 223
———, Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract), 214 (Paper), 423
Johnston, R. L., On standards for the storage of images and data, 294
Jones, Joie Pierce, Integration of medical imaging modalities (Abstract), 23, 405
Jost, R. G., Study of a distributed picture archiving and communication system for radiology, 133
Kerlin, B., Teleradiology field demonstration, the, 168
Koestner, Ken, Ultrasound picture archiving and communication systems, 369
Kouwenberg, Jef M. L, Laser-disc storage for all digital x-ray images in a large hospital, 316
Kreutzer, Heinrich W., Fiber optic broad band e for medical image processing, 240
Kuhlman, Jayne A., Teleradiology via the Naval Remote Medical Diagnosis System (RMDS), 174
Lazzaro, Gerard, Video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic imaging of the breast, 311
Lee, Kyo Rak, Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
LeFree, M. T., Centralized digital picture processing system for cardiac imaging, 375
Lehr, James L., Medical Community's View on PACS, The (Panel), 476
Levine, Errol, Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Lippman, Andrew B., Emerging computer media: on image interaction, 383
London, Jack W., Comprehensive radiology management system without picture archival and communication system (PACS), 334
———, Fiber optic communication system for medical images, 74
Lyons, David, Video-photographic system for rapid inexpensive unit-record and flexible replay of real-time ultrasonic imaging of breast, 311
Maguire, Gerald Q., Jr., American Association of physicists in Medicine (AAPM) standard magnetic tape format for digital image exchange, an, 284
———, Characteristics of a protocol for exchanging digital image information, 273
———, Image processing requirements in hospitals and an integrated systems approach, 206
Marceau, Carla, Equipment Manufacturers' View on PACS (Panel), 432
———, What is a picture archiving and communication system (PACS)?, 24
Marion, Joseph L., Equipment Manufacturers' View on PACS (Panel), 432
Martin, Michael, Rapid review of multiple images with reconstructions in arbitrary orthogonal planes, 319
Martin, Norman L., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
McCartney, W. H., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract), 214; (Paper), 423
Meyer-Ebrecht, D., Hierarchical approach to distributed picture information systems, 112
———, Laboratory prototype system for the archiving of computerized tomography (CT) pictures on optical discs, 308
———, Modular multiprocessor picture computer architecture for distributed picture information systems, 125
———, Proposed standard for variable format picture processing and a codec approach to match diverse imaging devices, 298

Mezrich, Reuben, Video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic imaging of the breast, 311
Millstone, T., Teleradiology field demonstration, the, 168
Mönnich, K.-J., Hierarchical approach to distributed picture information systems, 112
———, Laboratory prototype system for the archiving of computerized tomography (CT) pictures on optical discs, 308
Morton, Dan E., Comprehensive radiology management system without picture archival and communication system (PACS), 334
———, Fiber optic communication system for medical images, 74
Nadan, J. S., Recent advances in digital optical recording, 32
Nalcioglu, Orhan, Requirements and capabilities of video systems to provide quantitative information (Abstract), 268 (See also Requirements for and capabilities of x-ray video systems to provide qantitative information, 445)
Newton, Carol, Medical Community's View on PACS, The (Panel), 476
Nitteberg, Alan, Design criteria for networked image analysis system, 143
———, High speed multi-access data bus, 95
Northway, W. H., Jr., Analysis of hierarchical storage of radiologic images based on the Morse model, 327
Noz, M. E., Image processing requirements in hospitals and an integrated systems approach, 206
Nudelman, S., Photoelectronic-digital radiology, (PE-DI-R) at the University of Arizona (Abstract), 205, 422
Obermöller, Ulrich, Image management in the System CA/1, 161
O'Brien, W. D., Jr., On standards for the storage of images and data, 294
Ouimette, D., Photoelectronic-digital radiology, (PE-DI-R) at the University of Arizona (Abstract), 205, 422
Ovitt, T. W., Photoelectronic-digital radiology, (PE-DI-R) at the University of Arizona (Abstract), 205, 422
Partain, C. Leon, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract), 382 (See also Legal implications associated with new medical imaging technology, 464)
———, Medical Community's View on PACS, The (Panel), 476
———, Nuclear magnetic resonance (NMR) imaging: potential impact on medical diagnosis and digital data communications, 355
Patton, James A., Nuclear magnetic resonance (NMR) imaging: potential impact on medical diagnosis and digital data communications, 355
Pendergrass, Henry, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract), 382 (See also Legal implications associated with new medical imaging technology, 464)
Pfeiffer, Guido, Image management in the System CA/1, 161
Pisa, E. J., Filmless picture archiving and communication in diagnostic radiology, 9
Pizer, Stephen M., Contrast perception with video displays, 223
———, Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract), 214; (Paper), 423
Pollari, H., Current and future developments in radiation therapy treatment planning, 359
Pratt, William K., Equipment Manufacturers' View on PACS (Panel), 432
Preston, David F., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Prewitt, Judith M. S., IEEE logical format for external exchange of image data bases (Title only), 272, 456
Price, Hilton I., Cost of managing digital diagnostic images for a 614 bed hospital, 3
Price, Ronald R., Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract), 382 (See also Legal implications associated with new medical imaging technology, 464)
———, Nuclear magnetic resonance (NMR) imaging: potential impact on medical diagnosis and digital data communications, 355
Quimby, Charles, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract), 382 (See also Legal implications associated with new medical imaging technology, 464)
Quintin, June A., University of California San Francisco automated radiology department system—without picture archival and communication system (PACS), 338
Rangaraj, M. R., Computed tomography for remote areas via teleradiology, 182
Rasmussen, Will, Teleradiology via the Naval Remote Medical Diagnosis System (RMDS), 174
Reader, Cliff, Design criteria for networked image analysis system, 143
Rhodes, Michael L., Network image processing for computer tomography (CT) scanners: report on clinical trial sites, 102
———, True three-dimensional (3-D) display of computer data: medical applications, 248
Robinson, Ralph G., Use of medical images in today's hospitals (Abstract), 2, 400
Roeck, W. W., Requirements for and capabilities of x-ray video systems to provide quantitative information, 445
Roehrig, H., Photoelectronic-digital radiology, (PE-DI-R) at the University of Arizona (Abstract), 205, 422
Rollo, F. David, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract), 382 (See also Legal implications associated with new medical imaging technology, 464)
Rosenthal, Stanton J., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Rothman, Stephen L. G., Network image processing for computer tomography (CT) scanners: report on clinical trial sites, 102
Rowell, D., Current and future developments in radiation therapy treatment planning, 359
Sachs, Martin W., Applications of fiber optics to computer systems, 80
Scatliff, J. H., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract), 214; (Paper), 423
Scheibe, Paul O., Architecture of a family of medical imaging systems, 117
———, Equipment Manufacturers' View on PACS (Panel), 432
Schimpf, J. H., Image processing requirements in hospitals and an integrated systems approach, 206
Schmidt, J., Hierarchical approach to distributed picture information systems, 112
———, Modular multispectral picture computer architecture for distributed picture information systems, 125
Schneider, Roger H., Role of standards in the development of systems for communicating and archiving medical images, the, 270
Schwenker, Ronald P., Film selection considerations for video photography, 231
Seibert, J. A., Requirements for and capabilities of x-ray video systems to provide quantitative information, 445
Sherrard, Thomas, Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract), 382 (See also Legal implications associated with new medical imaging technology, 464)
Simborg, Donald W., University of California San Francisco automated radiology department system—without picture archival and communication system (PACS), 338

Skinner, F. L., Teleradiology field demonstration, the, 168
Staab, E. V., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communication system: expansion from a prototype at the University of North Carolina (Abstract), 214; (Paper), 423
Stephens, W. Hoyt, Legal implications associated with new medical imaging technology, 464
Stevens, Ilya, Teleradiology via the Naval Remote Medical Diagnosis System (RMDS), 174
Stover, Henry S., True three-dimensional (3-D) display of computer data: medical applications, 248
Suthasinekul, Surachai, Recent development in optical data storage, 65
Svensson, H., Modular multiprocessor picture computer architecture for distributed picture information systems, 125
Tarlton, Mark A., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Templeton, Arch W., Cost of managing digital diagnostic images for a 614 bed hospital, 3
———, Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Thomas, A. J., Pictorial information system architectures for diagnostic imaging, 153
Thompson, B. G., Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract), 214; (Paper), 423
Vanden Brink, John A., Present practice and perceived needs—managing diagnostic images, 387
Vilkomerson, David, Rapid review of multiple images with reconstructions in arbitrary orthogonal planes, 319
Vizy, Kalman N., Digital radiography and picture archiving and communication systems (PACS) (Title only), 348; (Paper), 459
Vogel, R. A., Centralized digital picture processing system for cardiac imaging, 375
Wake, Robert H., Equipment Manufacturers' View on PACS (Panel), 432
———, Nuclear medicine and the distributed system, 341
Washburn, D. B., Medical image communication system, plan, management and initial experience in prototype at the University of North Carolina, 19
———, Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract), 214; (Paper), 423
Wendler, Th., Hierarchical approach to distributed picture information systems, 112
———, Modular multiprocessor picture computer architecture for distributed picture information systems, 125
———, Proposed standard for variable format picture processing and a codec approach to match diverse imaging devices, 298
Wiles, J., Current and future developments in radiation therapy treatment planning, 359
Wiseman, Donald, Video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic imaging of the breast, 311
Zeleznik, M. P., Image processing requirements in hospitals and an integrated systems approach, 206
Zielonka, Jason, S., Medical Community's View on PACS, The (Panel), 476
Zimmerman, John B., Contrast perception with video displays, 223
Zoeller, Michael A., Existing and future capabilities in instrumentation magnetic recording, 56

Subject Index

American Association of Physicists in Medicine (AAPM) standard magnetic tape format for digital image exchange, an, 284
Analysis of hierarchical storage of radiological images based on the Morse model, 327
Applications of fiber optics to computer systems, 80
Architecture for distributed picture information systems, modular multiprocessor picture computer, 125
Architecture of a family of medical imaging systems, 117
Architecture for medical image processing, new systems, 240
Architectures for diagnostic imaging, pictorial information system, 153
Archiving and communication systems (PACS), digital radiography and Picture (Title only), 348; (Paper), 459

Breast, video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic imaging of the, 311

Cable information system in the hospital environment, theory and uses of a broad band coaxial, 89
Cardiac imaging, centralized digital picture processing system for, 375
Cathode ray tube (CRT) film recorders for medical imaging, future trends in, 235
Cathode ray tube (CRT) film recording of video based medical images, 216
Centralized digital picture processing system for cardiac imaging, 375
Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract), 382
Characteristics of a protocol for exchanging digital image information, 273
Clinical imaging system, orientation of a (Title only), 152, 418
Clinical trial sites, network image processing for computer tomography (CT) scanners: report on, 102
Codec approach to match diverse imaging devices, proposed standard for variable format picture processing and a, 298
Combined acquisition/processing for data reduction, 256
Communicating and archiving medical images, the role of standards in the development of systems for, 270
Communication system for medical images, fiber optic, 74
Communication system for radiology, study of a distributed picture archiving and, 133
Communication system: plan, management and initial experience in prototype at the University of North Carolina, medical image, 19
Communication systems (PACS), digital radiography and picture archiving and (Title only), 348; (Paper), 459
Communications, nuclear magnetic resonance (NMR) imaging: potential impact on medical diagnosis and digital data, 355
Communications systems: expansion from a prototype at the University of North Carolina, medical image (Abstract), 214; (Paper), 423
Communications systems—design and realizations, fiber optic broad band, 84
Comprehensive radiology management system without picture archival and communication system (PACS), 334
Computed tomography (CT) and picture archiving and communications systems (PACS), 349
Computed tomography (CT) for remote areas via teleradiology, 182
Computer architecture for distributed picture information systems, modular multiprocessor picture, 125
Computer-compatible tape family, Landsat, 278
Computer data: medical applications, true three-dimensional (3-D), 248

Computer media: on image interaction, emerging, 383
Computer systems, applications of fiber optics to, 80
Computer tomography scanners: report on clinical trial sites, network image processing for, 102
Contrast perception with video displays, 223
Cost of managing digital diagnostic images for a 614 bed hospital, 3
Criteria for networked image analysis system, design, 143
Current and future developments in radiation therapy treatment planning, 359

Data bases, IEEE logical format for external exchange of image (Title only), 272, 456
Data bus, high speed multi-access, 95
Data reduction, combined acquisition/processing for, 256
Data storage, optical disc, 43
Design criteria for networked image analysis system, 143
Diagnosis and digital data communications, nuclear magnetic resonance (NMR) imaging: potential impact on medical, 355
Diagnostic images, present practice and perceived needs—managing, 387
Diagnostic images for a 614 bed hospital, cost of managing digital, 3
Diagnostic imaging management system for a radiology department, salient characteristics of a distributed, 194
Diagnostic imaging, pictorial information system architectures for, 153
Diagnostic information utilizing optical disc, promising rapid access high-capacity mass storage technique for, 36
Diagnostic medical imaging: emphasis upon new technology, certain legal considerations as applied to (Abstract), 382 (See also Legal implications associated with new medical imaging technology, 464)
Diagnostic radiology, filmless picture archiving and communication in, 9
Digital radiography and picture archiving and communication systems (PACS) (Title only), 348; (Paper), 459
Digital radiology (PE-DI-R) at the University of Arizona, photoelectronic- (Abstract), 205, 422
Digital storage and fast communication links for medical image analysis, 246
Digitizing and interfacing of nondigital images, 261
Display of computer data: medical applications, true three-dimensional (3-D), 248
Displays, contrast perception with video, 223
Distributed picture information systems, hierarchical approach to, 112
Distributed picture information systems, modular multiprocessor picture computer architecture for, 125
Distributed system, nuclear medicine and the, 341

Electronic image management for medicine, 410 (See also Image management for photoelectric imaging (Abstract), 151)
Emerging computer media: on image interaction, 383
Equipment Manufacturers' View on PACS (Panel), 432
Existing and future capabilities in instrumentation magnetic recording, 56

Fast communication links for medical image analysis, digital storage and, 246
Fiber optic broad band communications systems—design and realizations, 84
Fiber optic communication system for medical images, 74
Fiber optics to computer systems, applications of, 80
Field demonstration, the teleradiology, 168
Film recorders for medical imaging, future trends in cathode ray tube (CRT), 235
Film recording of video based medical images, cathode ray tube (CRT), 216
Film selection considerations for video photography, 231
Filmless picture archiving and communication in diagnostic radiology, 9
Future trends in cathode ray tube (CRT) film recorders for medical imaging, 235

Hierarchical approach to distributed picture information systems, 112
Hierarchical storage of radiologic images based on the Morse model, analysis of, 327
High speed multi-access data bus, 95
Hospital, cost of managing digital diagnostic images for a 614 bed, 3
Hospital environment, theory and uses of a broad band coaxial cable information system in the, 89
Hospital, laser-disc storage for all digital x-ray images in a large, 316
Hospitals and an integrated systems approach, image processing requirements in, 206
Hospitals, use of medical images in today's (Abstract), 2; (Paper), 400

IEEE logical format for external exchange of image data bases (Title only), 272, 456
Image analysis, digital storage and fast communication links for medical, 246
Image analysis system, design criteria for networked, 143
Image communication system: plan, management and initial experience in prototype at the University of North Carolina, medical, 19
Image communications system: expansion from a prototype at the University of North Carolina, medical (Abstract), 214; (Paper), 423
Image data bases, IEEE logical format for external exchange of (Title only), 272, 456
Image exchange, an American Association of Physicists in Medicine standard magnetic tape format for digital, 284
Image information, characteristics of a protocol for exchanging digital, 273
Image interaction, emerging computer media: on, 383
Image management for medicine, electronic, 410 (See also Image management for photoelectric imaging (Abstract), 151)
Image management for photoelectric imaging (Abstract), 151 (See also Electronic image management for medicine, 410)
Image management in the System CA/1, 161
Image processing for computer tomography (CT) scanners: report on clinical trial sites, network, 102
Image processing, new systems architecture for medical, 240
Image processing requirements in hospitals and an integrated systems approach, 206
Image transmission and storage with remote and random access, nonfilm radiographic, 186
Images based on the Morse model, analysis of hierarchical storage of radiologic, 327
Images, cathode ray tube (CRT) film recording of video based medical, 216
Images and data, on standards for the storage of, 294
Images, digitizing and interfacing of nondigital, 261
Images, fiber optic communication system for medical, 74
Images in a large hospital, laser-disc storage for all digital x-ray, 316
Images, present practice and perceived needs—managing diagnostic, 387
Images with reconstructions in arbitrary orthogonal planes, rapid review of multiple, 319
Images, the role of standards in the development of systems for communicating and archiving medical, 270
Images for a 614 bed hospital, cost of managing digital diagnostic, 3
Images in today's hospitals, use of medical (Abstract), 151; (Paper), 400
Imaging of the breast, video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time ultrasonic, 311
Imaging, centralized digital picture processing system for cardiac, 375
Imaging devices, proposed standard for variable format picture processing and a codec approach to match diverse, 298
Imaging, future trends in cathode ray tube (CRT) film recorders for medical, 235
Imaging, image management for photoelectric (Abstract), 151 (See also Electronic image management for medicine, 410)
Imaging management system for a radiology department, salient characteristics of a distributed diagnostic, 194
Imaging modalities, integration of medical (Abstract), 23, 405

Imaging, pictorial information system architectures for diagnostic, 153
Imaging: potential impact on medical diagnosis and digital data communications, nuclear magnetic resonance (NMR), 355
Imaging, real-time digital video disk recorder for medical, 47
Imaging system, orientation of a clinical (Title only), 152, 418
Imaging systems in radiation oncology, 365
Imaging technology, legal implications associated with new medical, 464 (See also Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract), 382)
Information system architectures for diagnostic imaging, pictorial, 153
Information system in the hospital environment, theory and uses of a board band coaxial cable, 89
Integration of medical imaging modalities (Abstract), 23, 405

Laboratory prototype system for the archiving of computerized tomographic (CT) pictures on optical discs, 308
Landsat computer-compatible tape family, 278
Laser-disc storage for all digital x-ray images in a large hospital, 316
Legal considerations as applied to diagnostic medical imaging: emphasis upon new technology, certain (Abstract), 382 (See also Legal implications associated with new medical imaging technology, 464)

Magnetic recording, existing and future capabilities in instrumentation, 56
Magnetic tape format for digital image exchange, an American Association of Physicists in Medicine (AAPM) standard, 284
Management in the System CA/1, image, 161
Management system without picture archival and communication system (PACS), comprehensive radiology, 334
Management system for a radiology department, salient characteristics of a distributed diagnostic imaging, 194
Managing diagnostic images, present practice and perceived needs—, 387
Manufacturers' View on PACS, Equipment (Panel), 432
Medical applications, true three-dimensional display of computer data, 248
Medical Community's View on PACS, The (Panel), 476
Medical diagnosis and digital data communications, nuclear magnetic resonance (NMR) imaging: potential impact on, 355
Medical image analysis, digital storage and fast communication links for, 246
Medical image communication system: plan, management and initial experience in prototype at the University of North Carolina, 19
Medical image communications system: expansion from a prototype at the University of North Carolina (Abstract), 214; (Paper), 423
Medical image processing, new systems architecture for, 240
Medical images, cathode ray tube (CRT) film recording of video based, 216
Medical images, fiber optic communication system for, 74
Medical images, the role of standards in the development of systems for communicating and archiving, 270
Medical images in today's hospitals, use of (Abstract), 2; (Paper), 400
Medical imaging: emphasis upon new technology, certain legal considerations as applied to diagnostic (Abstract), 382 (See also Legal implications associated with new medical imaging technology, 464)
Medical imaging, future trends in cathode ray tube (CRT) film recorders for, 235
Medical imaging modalities, integration of (Abstract), 23, 405
Medical imaging, real-time digital video disk recorder for, 47
Medical imaging systems, architecture of a family of, 117
Medical imaging technology, legal implications associated with new, 464 (See also Certain legal considerations as applied to diagnostic medical imaging: emphasis upon new technology (Abstract), 382)
Medicine and the distributed system, nuclear, 341
Medicine, electronic image management for, 410 (See also Image management for photoelectric imaging (Abstract), 151)
Modular multiprocessor picture computer architecture for distributed picture information systems, 125

Morse model, analysis of hierarchical storage of radiologic images based on the, 327
Multiprocessor picture computer architecture for distributed picture information systems, modular, 125

Naval Remote Medical Diagnosis System (RMDS), teleradiology via the, 174
Network image processing for computer tomography (CT) scanners: report on clinical trial sites, 102
New systems architecture for medical image processing, 240
1980s, storage technology for the, 60
Nonfilm radiographic image transmission and storage with remote and random access, 186
Nuclear magnetic resonance (NMR) imaging: potential impact on medical diagnosis and digital data communications, 355
Nuclear medicine and the distributed system, 341

On standards for the storage of images and data, 294
Oncology, imaging systems in radiation, 365
Optical data storage, recent development in, 65
Optical disc data storage, 43
Optical disc, promising rapid access high-capacity mass storage technique for diagnostic information utilizing, 36
Optical discs, laboratory prototype system for the archiving of computerized tomographic (CT) pictures on, 308
Optical recording, recent advances in digital, 32
Orientation of clinical imaging system (Title only), 152, 418
Orthogonal planes, rapid review of multiple images with reconstructions in arbitrary, 319

(PACS), digital radiography and picture archiving and communication systems (Title only), 348; (Paper), 459
Perception with video displays, contrast, 223
Photoelectric imaging, image management for (Abstract), 151 (See also Electronic image management for medicine, 410)
Photoelectronic-digital radiology (PE-DI-R) at the University of Arizona (Abstract), 205, 422
Pictorial information system architectures for diagnostic imaging, 153
Picture archival and communication system (PACS), comprehensive radiology management system without, 334
Picture archival and communication system (PACS), University of California San Francisco automated radiology department system—without, 338
Picture archiving and communication in diagnostic radiology, filmless, 9
Picture archiving and communication system (PACS)?, what is a, 24
Picture archiving and communication system for radiology, study of a distributed, 133
Picture archiving and communication systems (PACS), computed tomography (CT) and, 349
Picture archiving and communication systems (PACS), digital radiography and (Title only), 348; (Paper), 459
Picture archiving and communication systems, ultrasound, 369
Picture computer architecture for distributed picture information systems, modular multiprocessor, 125
Picture information systems, hierarchical approach to distributed, 112
Picture processing and a codec approach to match diverse imaging devices, proposed standard for variable format, 298
Picture processing system for cardiac imaging, centralized digital, 375
Present practice and perceived needs—managing diagnostic images, 387
Promising rapid access high-capacity mass storage technique for diagnostic information utilizing optical disc, 36
Proposed standard for variable format picture processing and a codec approach to match diverse imaging devices, 298
Protocol for exchanging digital image information, characteristics of a, 273
Prototype system for the archiving of computerized tomographic (CT) pictures on optical discs, laboratory, 308

Prototype at the University of North Carolina, medical image communications system: expansion from a (Abstract), 214; (Paper), 423
Prototype at the University of North Carolina, medical image communication system: plan, management and initial experience in, 19

Quantitative information, requirements and capabilities of video systems to provide (Abstract), 268 (See also Quantitative information, requirements for and capabilities of x-ray video systems to provide, 445)

Radiation oncology, imaging systems in, 365
Radiation therapy treatment planning, current and future developments in, 359
Radiographic image transmission and storage with remote and random access, nonfilm, 186
Radiography and picture archiving and communication systems (PACS), digital (Title only), 348; (Paper), 459
Radiologic images based on the Morse model, analysis of hierarchical storage of, 327
Radiology department, salient characteristics of a distributed diagnostic imaging management system for a, 194
Radiology, filmless picture archiving and communication in diagnostic, 9
Radiology management system without picture archival and communication system (PACS), comprehensive, 334
Radiology (PE-DI-R) at the University of Arizona, photoelectronic-digital (Abstract), 205, 422
Radiology, study of a distributed picture archiving and communication system for, 133
Random access, nonfilm radiographic image transmission and storage with remote and, 186
Rapid review of multiple images with reconstructions in arbitrary orthogonal planes, 319
Real-time digital video disk recorder for medical imaging, 47
Real-time ultrasonic imaging of the breast, video-photographic system for rapid inexpensive unit-record recording and flexible replay of, 311
Recent advances in digital optical recording, 32
Recent development in optical data storage, 65
Reconstruction in arbitrary orthogonal planes, rapid review of multiple images with, 319
Recording, existing and future capabilities in instrumentation magnetic, 56
Recording and flexible replay of real-time ultrasonic imaging of the breast, video-photographic system for rapid inexpensive unit-record, 311
Recording, recent advances in digital optical, 32
Recording of video based medical images, cathode ray tube (CRT) film, 216
Remote areas via teleradiology, computed tomography for, 182
Remote Medical Diagnosis System (RMDS) teleradiology via the Naval, 174
Remote and random access, nonfilm radiographic image transmission and storage with, 186
Requirements and capabilities of video systems to provide quantitative information (Abstract), 268 (See also Requirements for and capabilities of x-ray video systems to provide quantitative information, 445)
Role of standards in the development of systems for communicating and archiving medical images, the, 270

Salient characteristics of a distributed diagnostic imaging management system for a radiology department, 194
Standard magnetic tape format for digital image exchange, an American Association of Physicists in Medicine (AAPM), 284
Standard for variable format picture processing and a codec approach to match diverse imaging devices, proposed, 298
Standards in the development of systems for communicating and archiving medical images, the role of, 270
Standards for the storage of images and data, on, 294
Storage for all digital x-ray images in a large hospital, laser-disc, 316
Storage and fast communication links for medical image analysis, digital, 246
Storage of images and data, on standards for the, 294
Storage, optical disc data, 43
Storage of radiologic images based on the Morse model, analysis of hierarchical, 327
Storage, recent development in optical data, 65
Storage technique for diagnostic information utilizing optical disc, promising rapid access high-capacity mass, 36
Storage technology for the 1980s, 60
Study of the distributed picture archiving and communication system for radiology, 133

Teleradiology, computed tomography (CT) for remote areas via, 182
Teleradiology field demonstration, the, 168
Teleradiology via the Naval Remote Medical Diagnosis System (RMDS), 174
Theory and uses of a broad band coaxial cable information system in the hospital environment, 89
Three-dimensional (3-D) display of computer data: medical applications, true, 248
True three-dimensional (3-D) display of computer data: medical applications, 248

Ultrasonic imaging of the breast, video-photographic system for rapid inexpensive unit-record recording and flexible replay of real-time, 311
Ultrasound picture archiving and communication systems, 369
University of Arizona, photoelectronic-digital radiology (PE-DI-R) at the (Abstract), 205, 422
University of California San Francisco automated radiology department system—without picture archiving and communication system (PACS), 338
University of North Carolina, medical image communication system: plan, management and initial experience in prototype at the, 19
University of North Carolina, medical image communications system: expansion from a prototype at the (Abstract), 214; (Paper), 423
Use of medical images in today's hospitals (Abstract), 2; (Paper), 400

Video based medical images, cathode ray tube (CRT) film recording of, 216
Video disk recorder for medical imaging, real-time digital, 47
Video displays, contrast perception with, 223
Video-photographic system for rapid inexpensive unit-recording and flexible replay of real-time ultrasonic imaging of the breast, 311
Video photography, film selection considerations for, 231
Video systems to provide quantitative information, requirements and capabilities (Abstract), 268 (See also Video systems to provide quantitative information, requirements for and capabilities of x-ray, 445)

What is a picture archiving and communication system (PACS)? 24

X-ray images in a large hospital, laser-disc storage for all digital, 316
X-ray video systems to provide quantitative information, requirements for and capabilities of, 445 (See also Requirements and capabilities of video systems to provide quantitative information (Abstract), 268)